Online treatment of adults with depression

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Summary

Chapter 1 offers the general introduction to the contents of this thesis. In summary, depression is a prevalent mental disorder with a substantial impact on the individual level as well as on the population level. Effective treatment is therefore needed. However, the treatment of depression encounters some problems; a limited number of people with depressive symptoms receive adequate treatment. This undertreatment could be the result of various underlying barriers. Treatment via the Internet is one way to overcome undertreatment. Most Internet-based treatments are based on cognitive behavioral therapy (CBT) because of its effectiveness for depression. It is unknown whether other forms of Internet-based treatment also work for depression and whether different forms work equally well. The main aim of this thesis is to evaluate Internet-based CBT and Internet-based problem solving therapy (PST) for people with depressive symptoms. Secondary aims are the evaluation of the cost-effectiveness of both treatments, establishing the working mechanisms of the treatments and determining the possible predictive and moderating variables of outcome. Furthermore, we performed a separate study on predictors of outcomes in Internet-based treatment for smoking cessation.

Chapter 2 describes the design of the randomized controlled trial in which we compared Internet-based CBT and Internet-based PST with a waiting list control group (WL). Recruitment of participants took place via newspapers and via the Internet. To be included in the study participants needed a score of 16 or higher on the Center of Epidemiological Studies – Depression scale (CES-D). Participants were randomized to one of the three conditions. Internet-based CBT was based on the Coping with Depression course and took 8 weeks to complete. Internet-based PST was based on Self-Examination Therapy and consisted mainly of problem solving procedures. PST took 5 weeks. All participants received weekly support by e-mail. Measurements were taken at baseline and at 5, 8, 12 weeks and 9 months after baseline. All questionnaires were administered online. Primary outcome was depressive symptoms as measured with the CES-D. Secondary outcomes were anxiety symptoms, quality of life, worrying, mastery, dysfunctional attitudes, problem solving skills, use of health care and work productivity. Analyses were performed according to the intention to treat principle.

Chapter 3 presents the findings regarding the short term clinical effectiveness of Internet-based CBT and Internet-based PST compared to the control group. A total of 263 participants were randomized to the three conditions. Of these, 70% completed questionnaires after five weeks, 66% after eight weeks and 57% after twelve weeks. With CBT, 71.6% of the participants completed at least four modules and 38.6% completed all eight. With PST, 55.7% participants completed three or more sessions and 37.5%

finished the whole course. Between-group effect sizes for depressive symptoms were 0.54 for CBT after eight weeks and 0.47 for PST after five weeks. These effects were further improved at twelve weeks (CBT: 0.69, PST: 0.65). For anxiety and quality of life, effect sizes were at a medium and low level respectively. For a change to be clinically significant, a participant needed to have recovered (< 16 on the CES-D) as well as have shown reliable improvement at 12 weeks follow-up. After twelve weeks, clinically significant change was significant higher for CBT (38.6%) and PST (34.1%) than for WL (0.0%). The results show that Internet-based CBT and Internet-based PST are both effective in reducing depressive symptoms in comparison to a waiting list control group.

Chapter 4 reports an economic evaluation in which the cost-utility and cost-effectiveness of the two Internet-based interventions were evaluated. Results cover the 12 week follow-up period. Cost-utility analysis showed that cognitive behavioral therapy and problem solving therapy have a 52% and 61% probability respectively of being more acceptable than waiting when the willingness to pay is €30 000 for one quality adjusted life year (QALY). These probabilities gradually rise in tandem with a higher ceiling for the willingness to pay for one QALY. Results regarding the cost-effectiveness of the two interventions showed a more favorable picture; When society is prepared to pay €10 000 for clinically significant change from depression, the probabilities of cognitive behavioral therapy and problem solving therapy being more acceptable than waiting are 91% and 89%, respectively. Comparing both Internet-based treatments showed no clear preference for one of the treatments. It can be concluded that both interventions have a high probability of being cost-effective with a modest value placed on clinically significant change in depressive symptoms.

Chapter 5 describes a study that aimed to have a closer look at treatment specificity and potential mediators of the two Internet-based interventions. Potential mediators included dysfunctional attitudes, various problem solving skills, worry, and feelings of control. Both treatments were more effective than the control group in reducing dysfunctional attitudes, worry, a negative problem orientation and in enhancing feelings of control at 8 weeks follow-up. For positive problem orientation and avoidance style, only PST participants improved more than the waiting list participants. No differences between the treatments were found on each of these variables. Mediation analyses showed that dysfunctional attitudes, worry, a negative problem orientation and perceived control all played a mediating role in Internet-based CBT as well as in Internet-based PST. Our findings suggested that the working mechanisms of two Internet-based interventions with a different theoretical background seem to be comparable.

Chapter 6 presents findings regarding potential predictors and moderators of outcome to Internet-based CBT and Internet-based PST. Potential predictors/moderators were demographic variables, illness severity, dysfunctional attitudes and problem solving skills. Outcomes were improvement and clinically significant change as measured with the CES-D at 8 weeks follow-up. Results demonstrated that higher baseline depression and no use of medication predicted improvement, while older age and higher education predicted clinically significant change across all groups. A more negative problem orientation increased the likelihood of improvement in both interventions compared to the control group. No moderating variables between CBT and PST were found. This study indicated that predicting variables are dependent on the outcome measure used. The predicting variables might be used to identify subgroups for whom other treatments are needed.

Chapter 7 includes the findings from a separate study that aimed to investigate predictors of smoking cessation. Data from international randomized control trials comparing four Spanish and English language Internet interventions were used. Participants were 11,250 smokers from 152 countries. Outcome measures were self-reported serious quit attempts, smoking abstinence in the last 7 and 30 days and prolonged abstinence. Factors predictive of abstinence (according to two or three abstinence measures) were being English-speaking, residing in a high income country, low nicotine dependence, treatment condition, and the following psycho-social variables: currently being a salaried employee, higher self-rating on a socioeconomic “ladder” measure, higher quit confidence, being married, no smokers at home, and not working (vs. being exposed to smokers at work). And there was an indication that no history of a major depressive episode increased the likelihood of abstinence.

Chapter 8 provides the general discussion of this thesis. In light of our results and previous research we can conclude that Internet-based treatment is an effective way of treating depression. Our study showed that, alongside cognitive behavioral therapy, these treatments can be based on problem solving procedures as well. Implications of the results, limitations of our study and suggestions for future work are presented in this chapter.